

ABSTRACT OF THE DISCLOSURE

An apparatus for branch metric computation and add-
compare-select operation in a rate $1/n$ Viterbi decoder with
a constraint length of K . The apparatus of the invention
5 includes a branch metric generator and an add-compare-select
unit. The branch metric generator calculates a plurality of
branch metrics each of which is a measure between a
currently received data symbol and a corresponding branch
label. The add-compare-select unit can generate respective
10 decision bits for a pair of odd and even states at next
instant with a novel pre-computational architecture.
Further, a local winner between the odd and even states is
predetermined in a manner providing reduction of the
activity required by the computation. Thus the add-compare-
15 select unit outputs a path metric of the local winner,
whereby a saving of half the output number of path metrics
is achieved.